



Key Elements of Performance-Based Planning and Programming

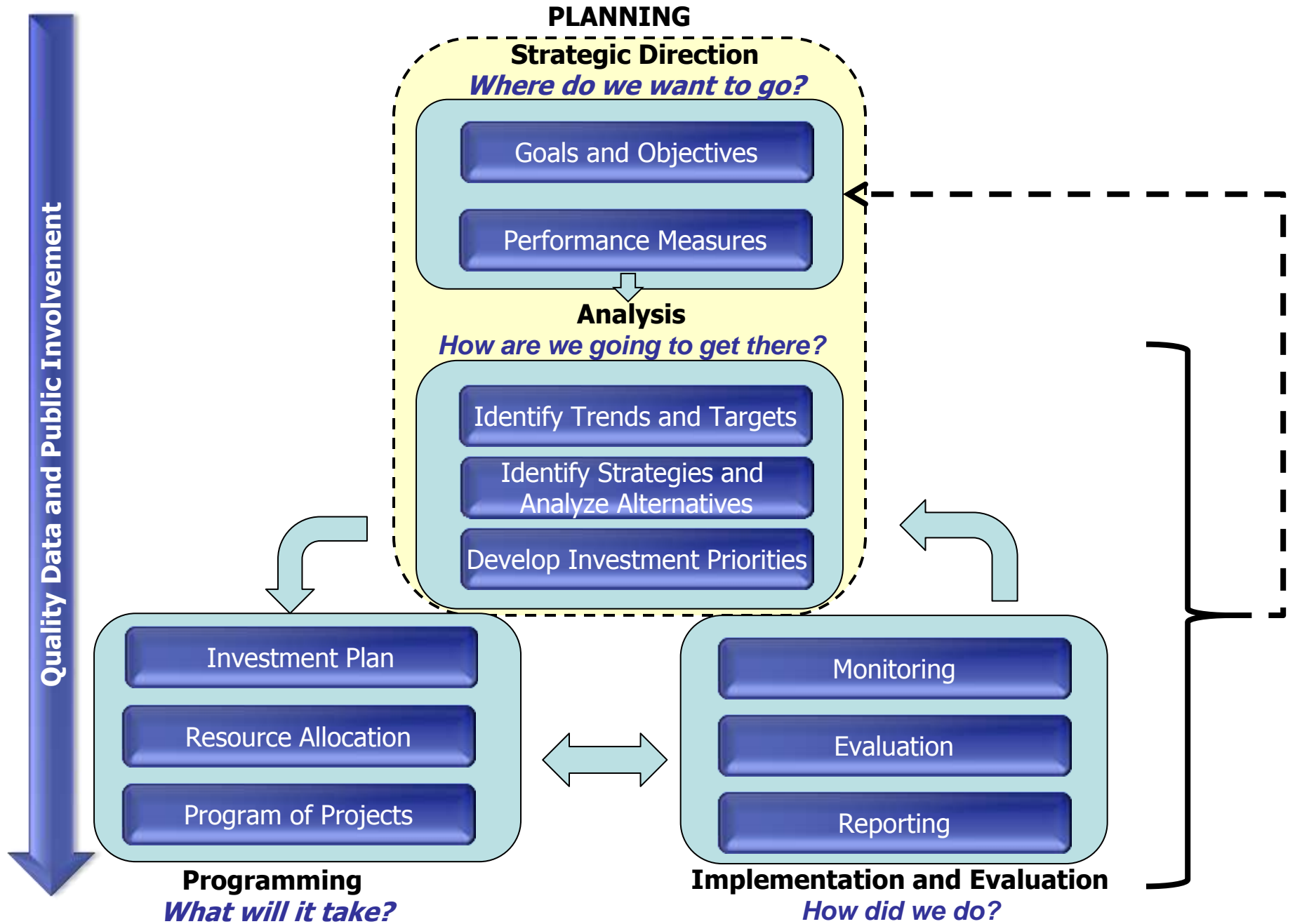
**California Workshop
November 21, 2013**

Module Topics

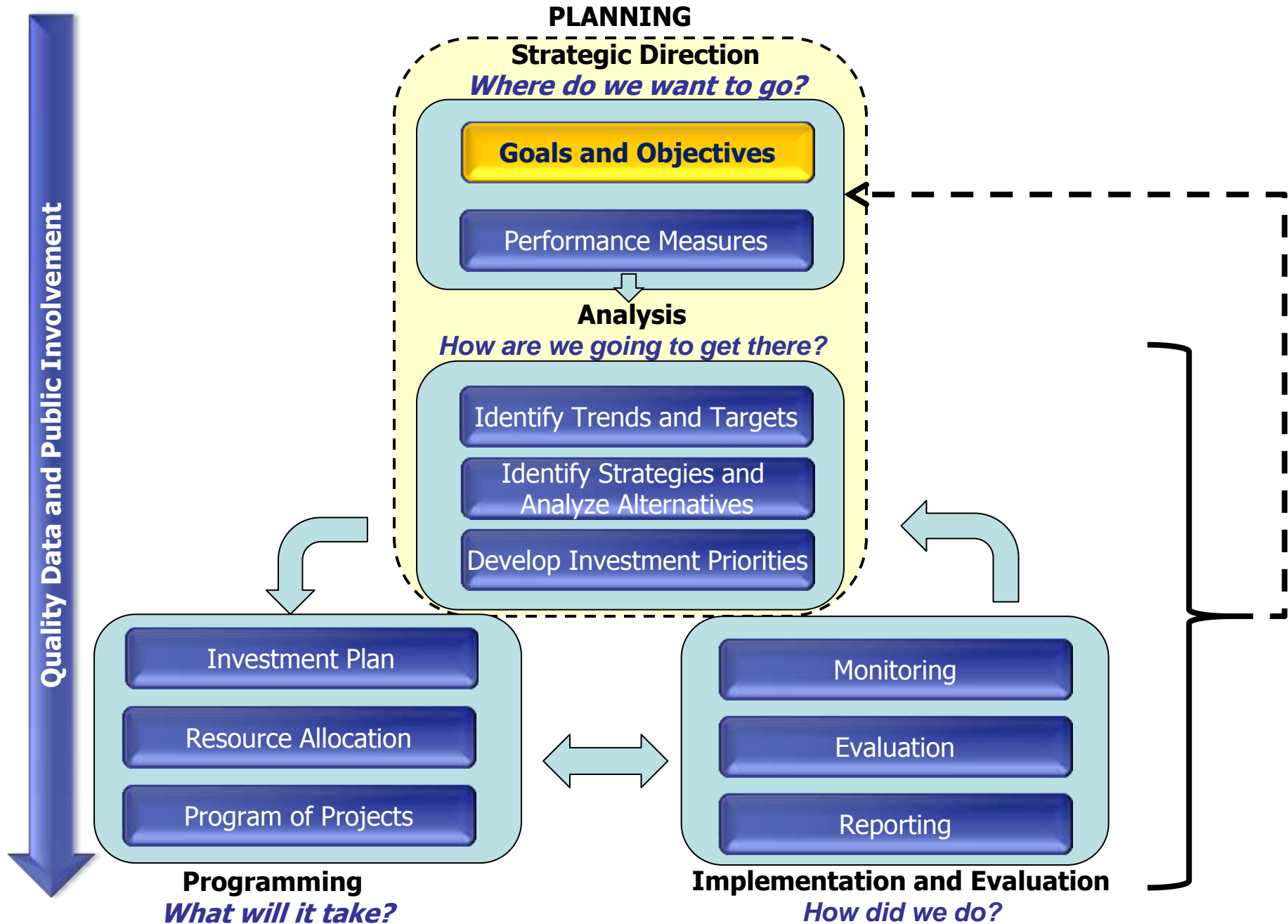
- **Elements of Performance-Based Planning**
 - Visioning
 - Goals
 - Objectives
 - Performance Measures
 - Targets
 - Resource Allocation
 - Reporting

Objectives

- Explain use of goals, objectives, and performance measures in planning
- Explain the difference between aspirational and realistic targets
- Understand how performance measures support tradeoff decisions and resource allocation
- Describe how monitoring and reporting can help to improve a performance-based process



PERFORMANCE-BASED PLANNING AND PROGRAMMING



Definitions

- **Vision**: Long term, desired future for the transportation system
- **Goals**: Generalized statements that broadly relate the physical environment to values
- **Objectives**: Specific measurable statements related to the attainment of goals



Goals

- Vision: Long term, desired future for the transportation system
- **Goals: Generalized statements that broadly relate the physical environment to values**
- **Objectives**: Specific measurable statements related to the attainment of goals

Caltrans Mission, Vision and Goals

■ MISSION & VISION

- Caltrans Improves Mobility Across California

■ GOALS

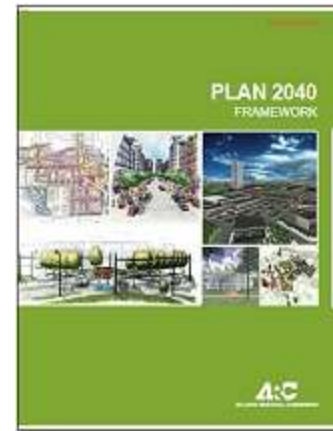
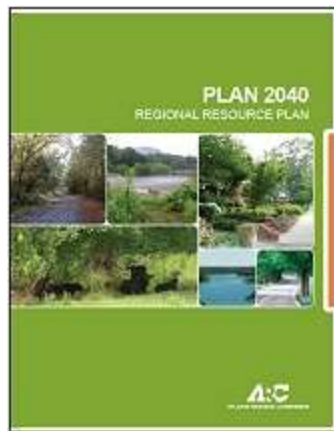
- Safety- Provide the safest transportation system in the nation for users and workers.
- Mobility- Maximize transportation system performance and accessibility.
- Delivery- Efficiently deliver quality transportation projects and services.
- Stewardship- Preserve and enhance California's resources and assets.
- Service- Promote quality service through an excellent workforce.



"E" Principle	Goal	Performance Objective
Economy	Maintenance and Safety	Improve Condition of Assets Reduce Collisions and Fatalities
	Reliability	Reduce Delay
	Efficient Freight Travel	
	Security and Emergency Management	Reduce Security Vulnerability Improve Emergency Preparedness
Environment	Clean Air	Reduce Vehicle Travel
	Climate Protection	Reduce Emissions
Equity	Equitable Access	Improve Affordability
	Livable Communities	

Atlanta Regional Commission 2040 Long Range Plan Goals

- Lead as the Global Gateway to the South
- Encourage Healthy Communities
- Expand Access to Community Resources

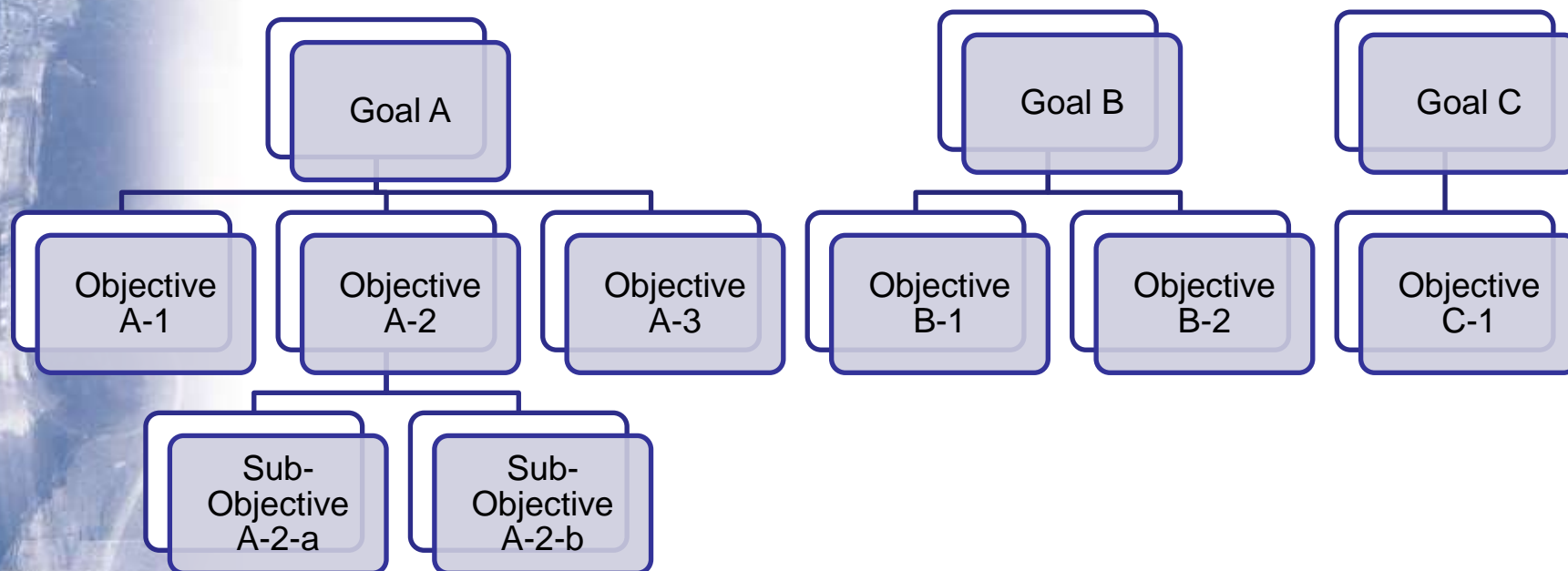


Objectives

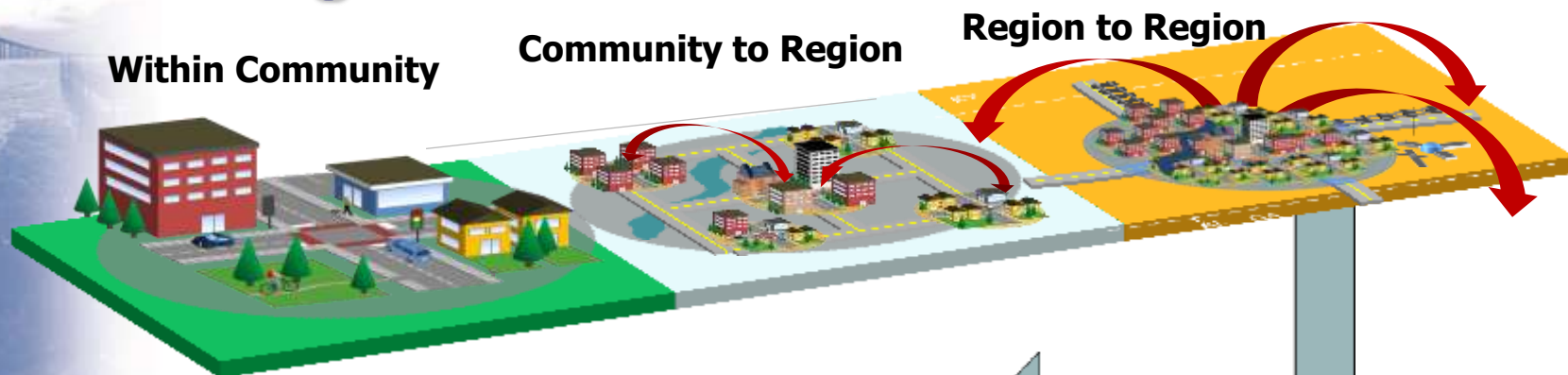
- Vision: Long term, desired future for the transportation system
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Objectives: Relation to Goals



Chattanooga TPO 2040 RTP



Region to Region Objectives

- Preserve, maintain, and improve existing infrastructure before adding new capacity
- Support continued economic growth of the region by improving intermodal connections that reduce delay for both people and goods
- Reduce delay on critical regional thoroughfares with minimal impact to community, historic and environmental resources
- Improve the efficiency and reliability of freight, cargo, and goods movement by reducing delay on corridors critical to freight movement
- Improve travel time reliability through improved system operations

Objectives

- **Objective = specific, measurable statement that supports achievement of a goal**
 - Example: Reduce pedestrian fatalities (by 10 percent by 2025)
 - Types of objectives:
 - Outcome: reflects concerns of the public (e.g., incident-based delay)
 - Output: reflects actions that affect outcomes (e.g., clearance time of incidents)
 - Activity: reflects actions taken by transportation agencies (e.g., number of cameras tracking system conditions)
- **It is critical to involve the public in developing goals and objectives as a strategic foundation for a performance-based approach to decision-making**

“SMART” Objectives

- **Specific:** Sufficiently descriptive but not dictating approach
- **Measurable:** Quantitative (number, degree)
- **Agreed:** Consensus on meaning and value
- **Realistic:** Can be accomplished with expected resources
- **Time-bound:** Identifies timeframe

Maryland SHA Objectives

FY 2012-2015 Business Plan

Key Performance Area	Example SMART Objectives
Safety	Reduce the annual number of traffic related fatalities on all roads in MD from 592 in 2008 to 475 or fewer (19.8% reduction) by December 31, 2015
Mobility/Economy	Achieve an annual user cost savings of at least \$1.1 billion as a result of congestion management
System Preservation and Maintenance	Maintain annually at least 84% of the SHA pavement network in acceptable overall pavement condition (cracking, rutting, and ride)

Mid-Ohio Regional Planning Commission

2012-2035 MTP

Use public investments to benefit the health, safety and welfare of people

- Increase access to transportation choices
- Increase safety of central Ohio residents
- Maximize the life of existing infrastructure

95% of pavement in acceptable condition by 2035

Increase the percent of population within 3/4 mile from bikeway from 62% to 80% by 2035

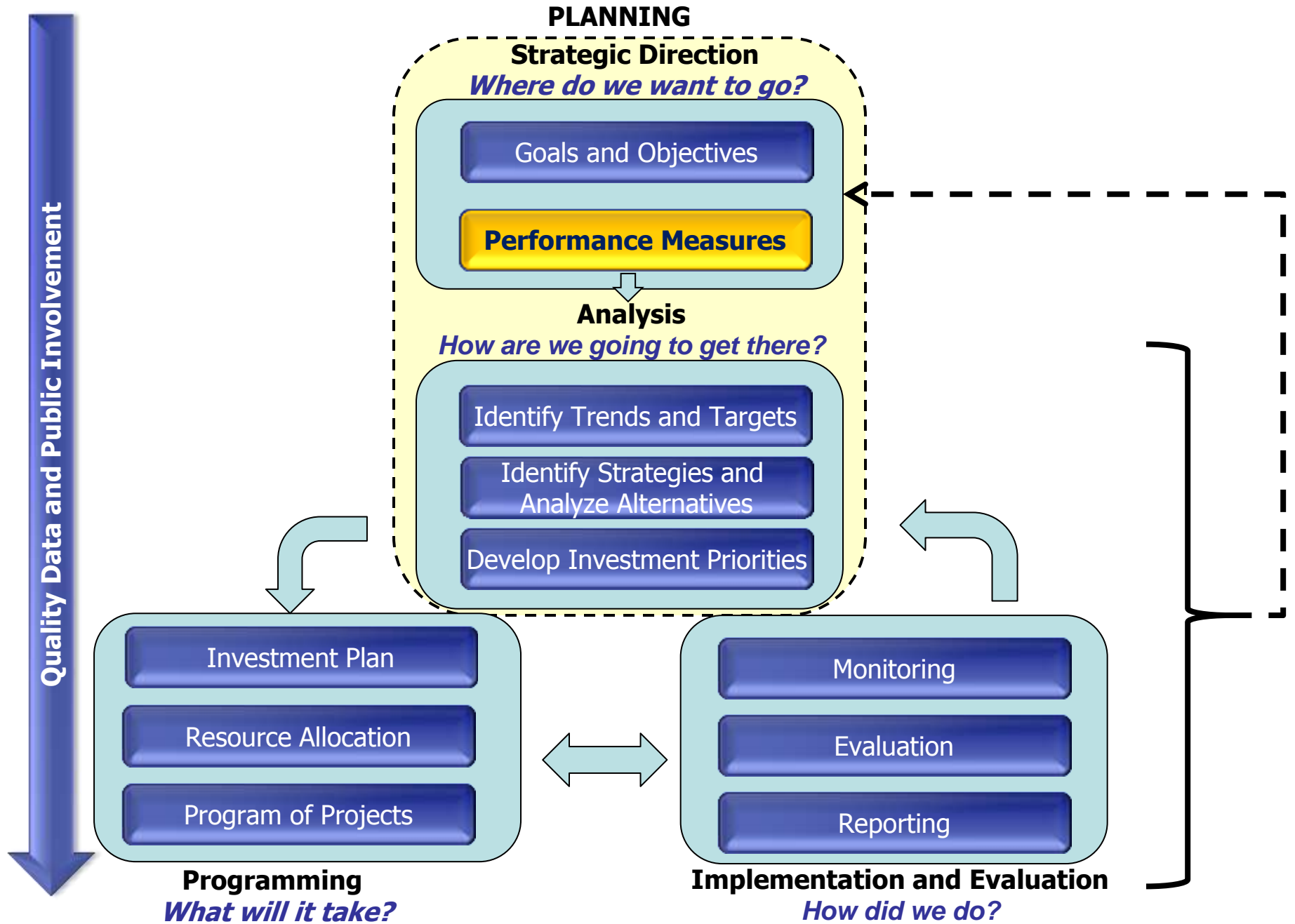
Reduce the crash rate by 15% by 2035

Reduce structurally deficient, functionally obsolete bridges by 25% by 2035

Increase the percent of population in urban areas within 3/4 mile from bus stop from 69% to 80% by 2035

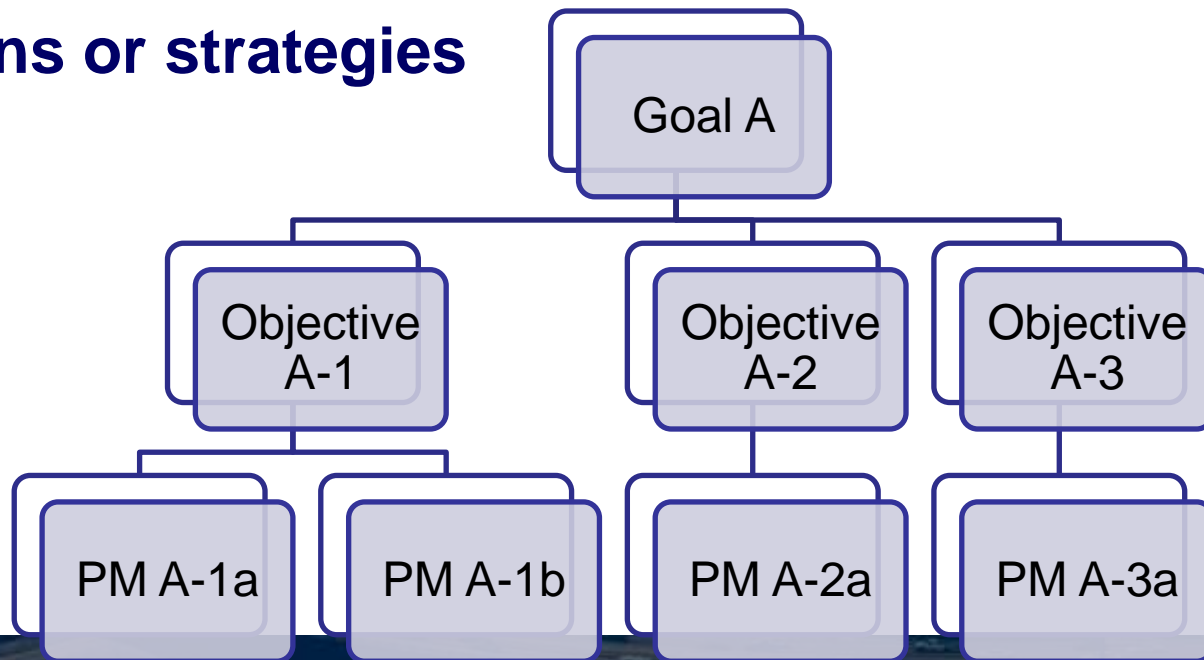
View other MORPC Goals and Objectives:

http://morpc.org/pdf/2012MTP_ExecSummary_May.pdf



Performance Measures Provide a Means to Evaluate

- Performance monitoring – How well current system meets objectives
- Performance evaluation – Evaluation of future plans or strategies



Types of Performance Measures

- **Outcome measure: impact of actions and activities on actual system conditions/performance**
 - Percent of pavement in good condition
- **Output measures: amount of activity accomplished**
 - Number of lane miles resurfaced in a 5-year period
- **Most agencies need and use both output and outcome measures**
- **Focus of performance management is on outcomes**

SEMCOG: Incorporating Measures into the Planning Process

Program Area	Performance Measure
Pavement Preservation	Percent of pavement in good or fair condition
Highway Capacity	Hours of delay per 1,000 vehicle miles
Bridge Preservation	Percent of bridges in good or fair condition
Safety	Fatalities per 100 million vehicle miles
Transit	Extent of transit network
Nonmotorized	Population % within ½ mile of a facility

Champaign Urbana MPO

2035 LRTP Measures

Goal #6: To provide facilities for non-auto modes of transportation in order to improve mobility and decrease the number of vehicles on our roadways

Objective 2: Increase local transit ridership by at least 5% by 2014

Annual Transit Ridership

Number of Transit Routes

Objective 3: Increase the number of enplanements at Willard Airport by at least 10% by 2014

Annual Enplanements

Number of Flights

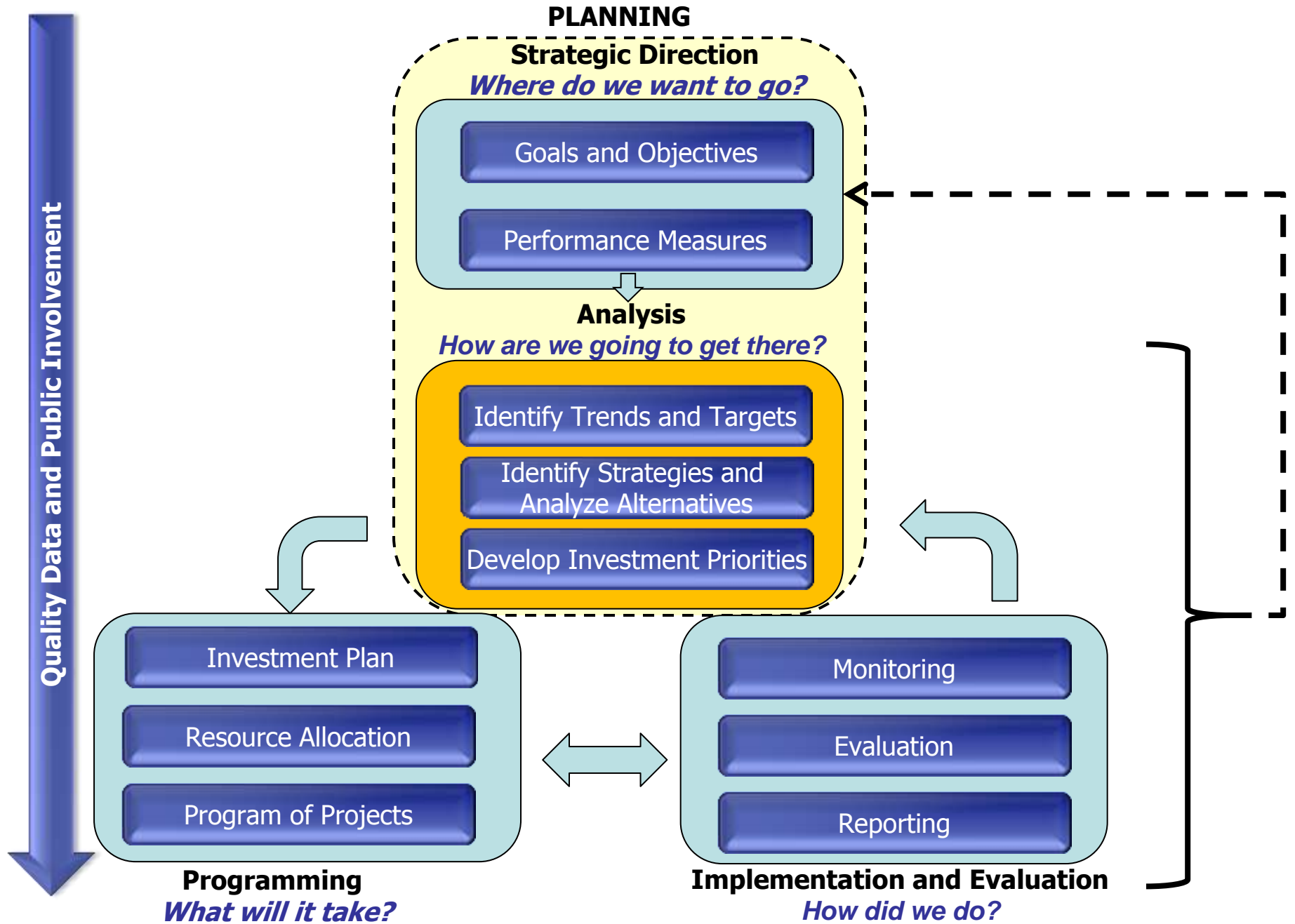
Objective 4: Increase the number of Amtrak boardings at Illinois Terminal by at least 15% by 2014

Annual Ridership at Illinois Terminal

Frequency of Trains per day

MAP-21: National Goal Areas and Performance Measures

National Goal Areas	National Performance Measures
Safety	Serious injuries & fatalities (# and per VMT)
Infrastructure Condition	Pavement & bridge condition (Interstate and remainder of NHS)
Congestion Reduction	Traffic Congestion
System Reliability	Performance (Interstate and remainder of NHS)
Freight Movement and Economic Vitality	Interstate freight movement
Environmental Sustainability	On-road mobile source emissions
Reduced Project Delivery Delays	None
Transit State of Good Repair	TBD/None
Transit Safety	TBD/None



PERFORMANCE-BASED PLANNING AND PROGRAMMING

Target Setting

- **Key question – Aspirational or vision-based targets vs. evidence-based targets**
- **No single approach appropriate for all areas**
- **MAP-21 requires evidence-based targets – what do you expect to achieve**



MTC Targets for *Sustainable Community Strategy/RTP*

- **Goal Area: Transportation System Effectiveness**
 - **Targets**
 - Decrease average per-trip travel time by 10%
 - Increase local road pavement condition (PCI) to 75 or better
 - Decrease distressed lane-miles of state highways to less than 10% of total lane-miles
 - Reduce average transit asset age to 50% of useful life

Minnesota DOT Target Example



Green: At or above target



Yellow: Moderately below target



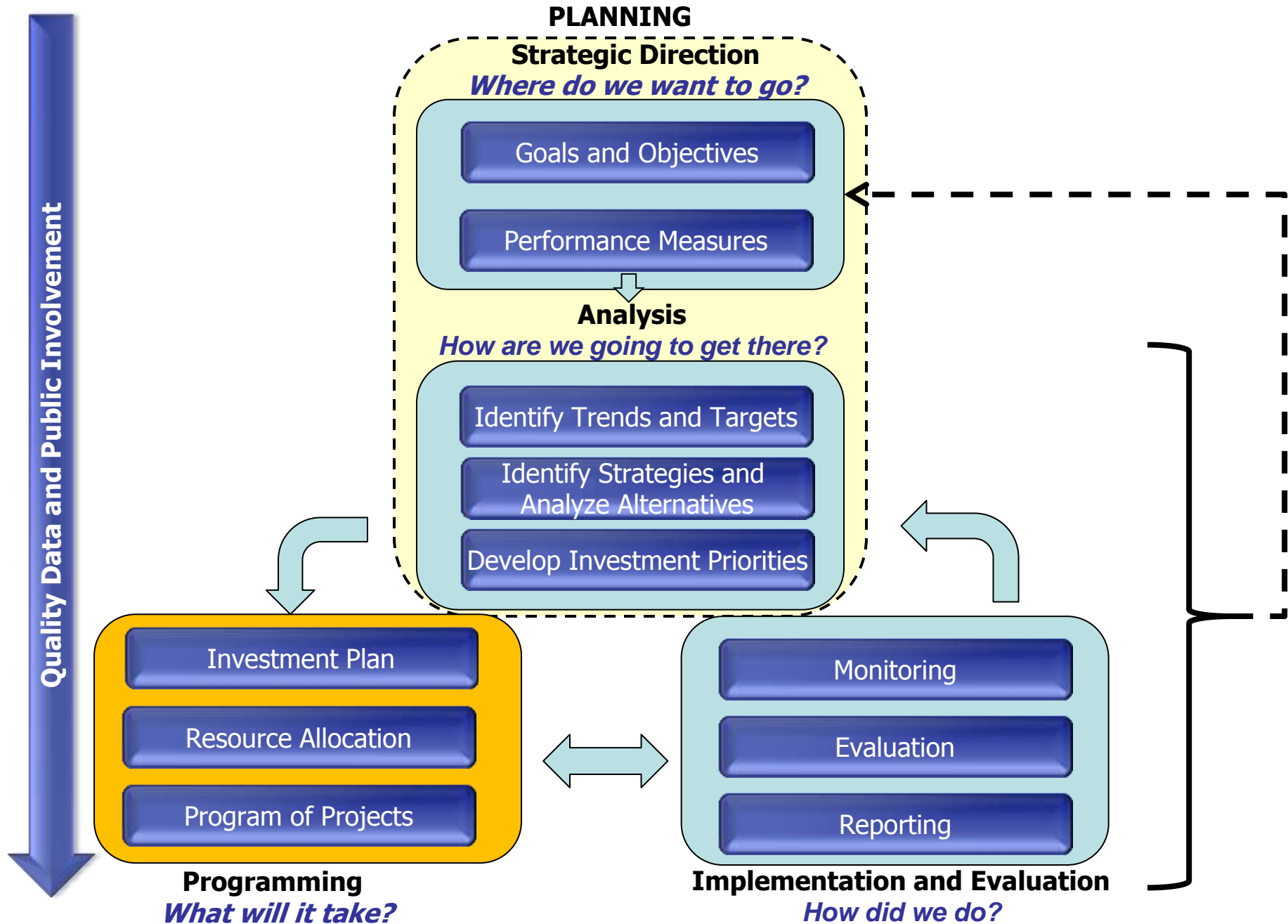
Red: Seriously below target



MnDOT Primarily Responsible

Target

Measure	Score	Result	Target	Trend	Analysis
traveler safety					
Minnesota Traffic Fatalities: All state and local roads		368 in 2011	400 by 2010		Final 2011 data indicate 368 fatalities—the lowest number of fatalities in a generation. Annual fatalities are down by 141 since 2007. Comparison —3rd lowest state in 2010, with fatality rate 35% below U.S. average.
infrastructure preservation					
Bridge Condition: % Good and Satisfactory, State principal arterials		85.4% 2011	84%		In 2011 bridges on principal state roads in Good or Satisfactory condition fell to 85.4%, which is still meeting target. The percent rated Poor increased slightly to 3.3%, but is projected to improve and be close to the 2% target in 2015. Comparison —Minnesota has the 4th lowest percentage of bridges rated structurally deficient or functionally obsolete—less than half the national average—according to 2011 rankings by Better Roads magazine.
Bridge Condition: % Poor, State principal arterials		3.3% 2011	2%		
Pavement: Ride Quality Poor, All state highways, % of miles		6.6% 2011	5%-9% performance band		State pavement condition declined in 2011 after improving slightly in 2010. Overall, 6.6 percent of state highway miles were in poor condition in 2011. Both principal arterial pavement measures fell short of their targets.
Pavement: Ride Quality Poor, State principal arterials, % of miles		4.8% 2011	2%		MnDOT's Better Roads program will slow the deterioration of pavements by improving nearly 700 miles of poor roads. Additionally, increased pavement investment in response to the new federal transportation bill is predicted to result in 8.6 percent poor in 2016. This falls within the 5-9 percent range for poor pavement that represents an acceptable risk. MnDOT is committed to keeping poor pavements within this acceptable range, though this will take significant investment in the years to come. Another pavement quality measure, appearing in the Minnesota Dashboard, is discussed in the Pavement section.
Pavement: Ride Quality Good: State principal arterials, % of miles		67.3% 2011	70%		



Resource Allocation

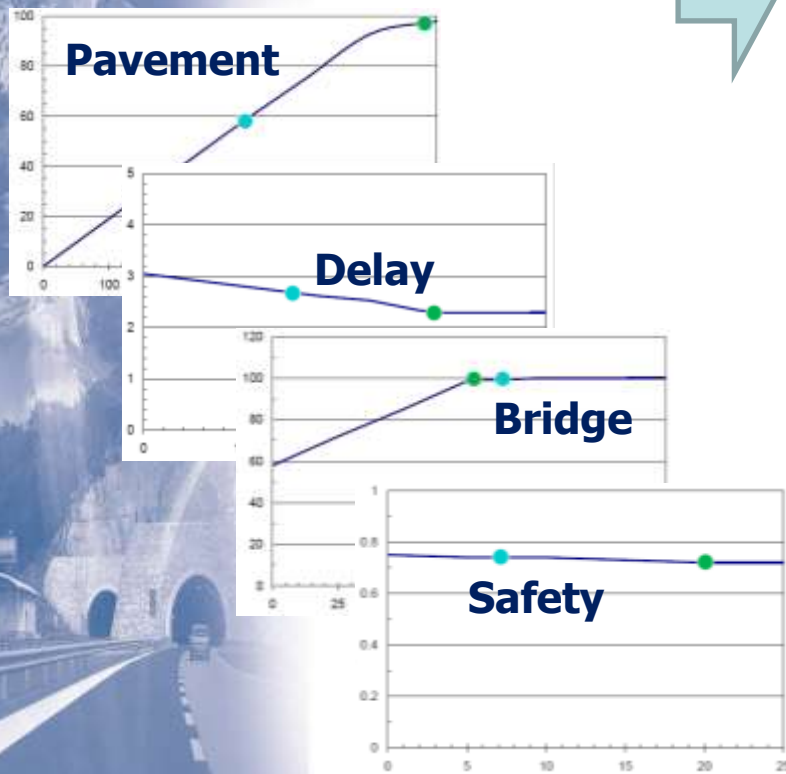
- **Resources include investments in infrastructure, staffing decisions, and policy/strategy decisions**
- **Performance-based investment decision making requires an understanding of ...**
 - The strategies that are likely to improve performance
 - The impacts of these strategies on expected performance
 - Data and tools to be able to measure or estimate these impacts

Performance-Based Approaches to Resource Allocation

Investment Scenarios	Project-Level Evaluation
<ul style="list-style-type: none">• Assess how investment decisions today impact long-term performance• Evaluate and compare scenarios and investment tradeoffs to achieve desired performance• Actively engage stakeholders and decision-makers	<ul style="list-style-type: none">• Evaluate the effectiveness of projects and strategies to achieve performance targets• Prioritize projects and estimate investment needs• Actively engage stakeholders and decision-makers

Example - SEMCOG

- 1 Examine the relationship between program-level investment and performance



- 2 Examine scenarios that vary funding by program area; adopt a preferred scenario
 - Preservation focused
 - Transit focused
 - Public preference driven

- 3 Track performance over time; track investments against the adopted scenario

Project Type	Planned Funding	Actual Funding
Bridge	5%	5.2%
Nonmotorized	1%	1.1%
Pavement	24%	14.5%
Road Expansion	8%	3.5%
Safety	1%	0.6%
Transit Capital	8%	7.0%
Operating	53%	68.1%
Total	100.0%	100.0%

MTC Project-Level Assessment

Project Performance Assessment: Results by Project Type

Bubble size represents the total annual benefits for all projects of that type.

- Road Project
- Transit Project
- Regional Program

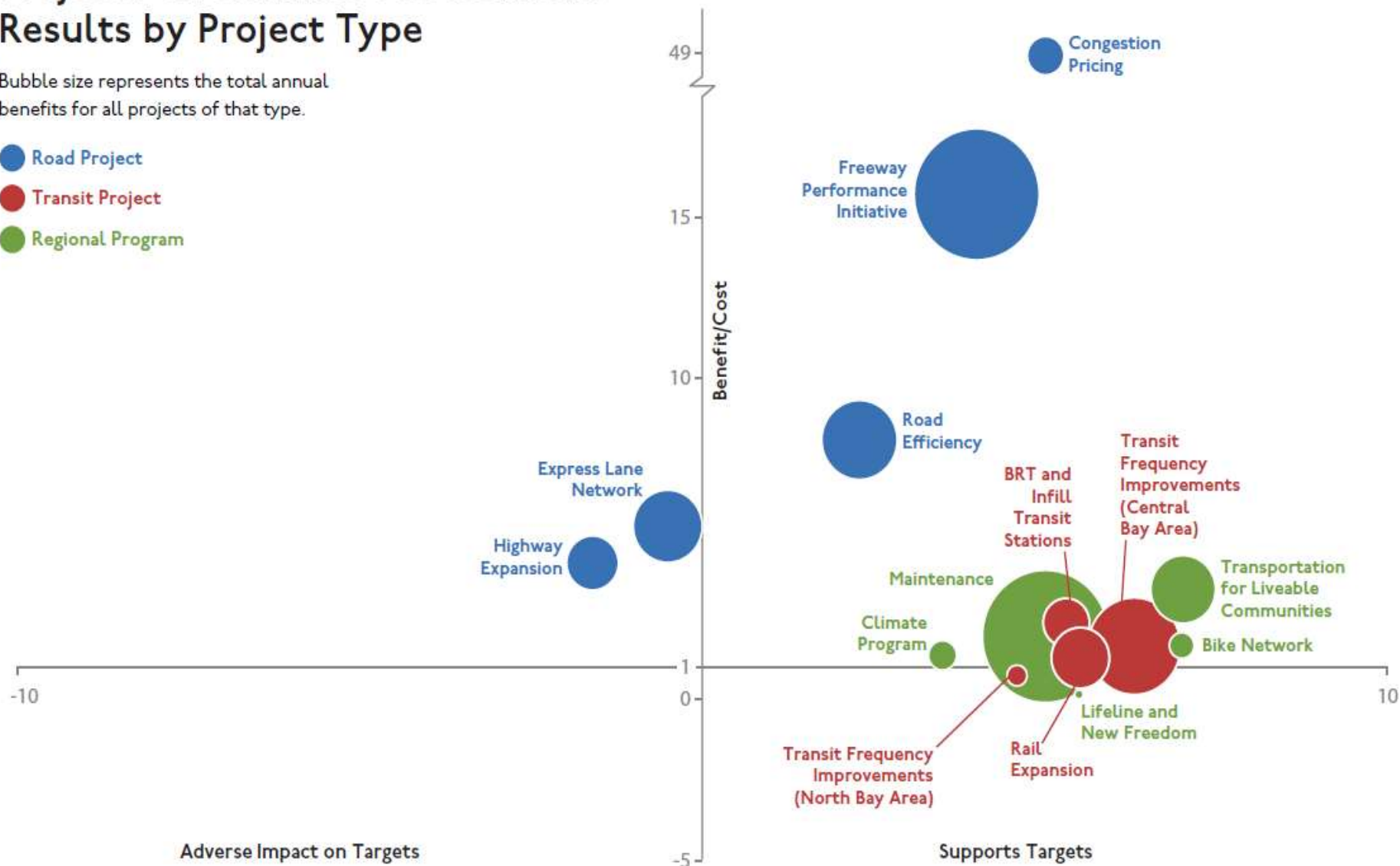
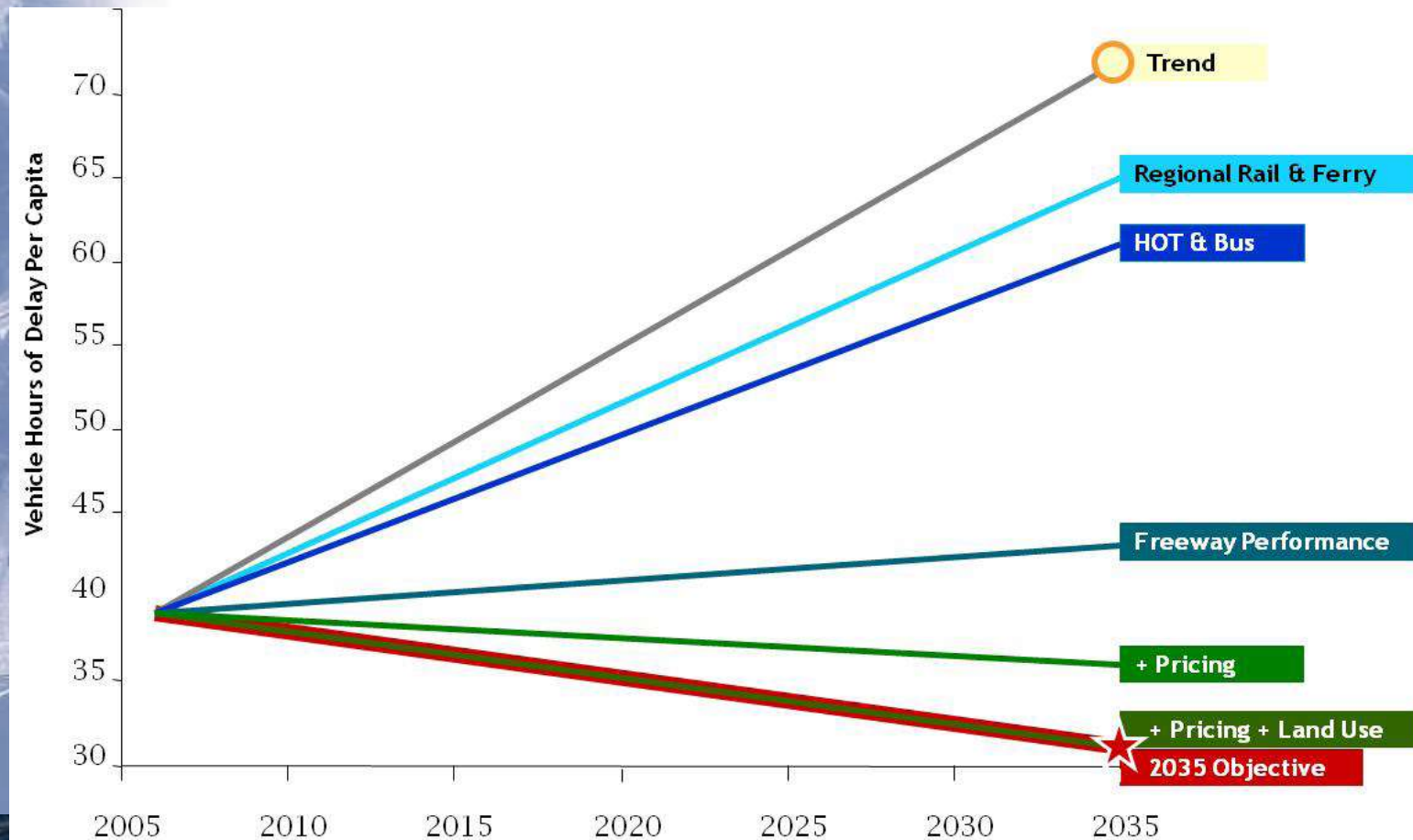
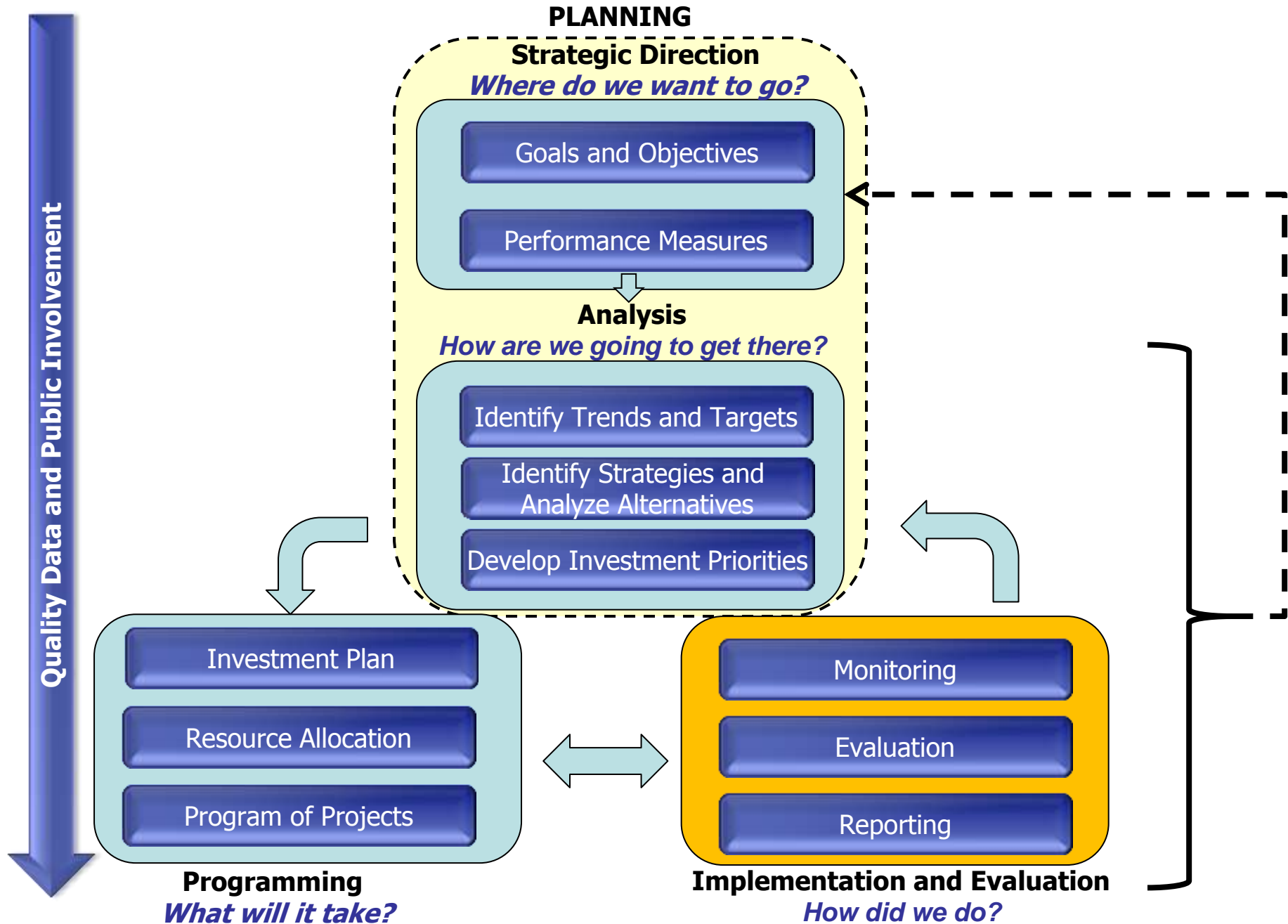


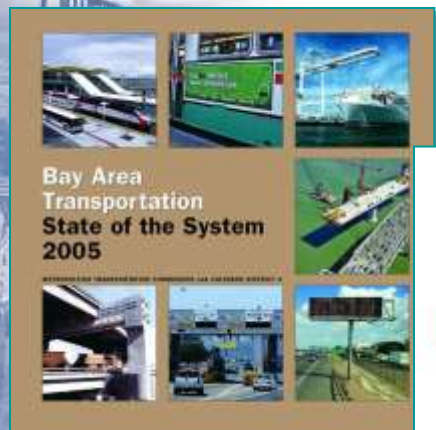
FIGURE A-2

MTC Performance Assessment to Achieve Congestion Reduction Target





Reporting Examples



State of the System 2005
Bay Area Transportation

Quarterly Performance Scorecard
North Carolina DOT



2013 Annual Attainment Report
Maryland DOT



The Gray Notebook
Washington DOT



Dashboard
Virginia DOT



State of the System
Oregon DOT



Tracker
Missouri DOT

Example – Mn/DOT

Multimodal Plan



Investment Plans



Performance Monitoring



Supports Minnesota GO 50-year vision. Establishes objectives & strategies to guide investment



Integrates performance planning & risk assessment to establish priorities for projected funding. Measures impact of investments on performance targets.



Regular review of performance in each policy area

Getting Started with PBPP

- **Build on what you have**
- **Develop a Regional or Statewide Vision of the topic not just jurisdiction by jurisdiction**
- **Involve partners when defining objectives & strategies**
- **Refine objectives over time**
- **Refine process or get more realistic over time**





DISCUSSION



U.S. Department of Transportation
**Federal Highway
Administration**